strategy and report on economic security, science, research, innovation, manufacturing, and job creation, to establish a critical supply chain resiliency program, and for other purposes; which was ordered to lie on the table; as follows:

At the appropriate place in title V of division B, insert the following:

SEC. 25___. UNIVERSITY INFRASTRUCTURE REVITALIZATION PROGRAM.

(a) PURPOSES.—The purposes of this section are—

(1) to upgrade and expand nuclear research capabilities of universities in the United States to meet the research requirements of advanced nuclear energy systems;

(2) to establish regional nuclear innovation hubs and university-led consortia to support innovation in nuclear science and engineering and related disciplines; and

(3) to ensure the continued operation of university research reactors.

(b) DEFINITIONS.—In this section:

(1) ADVANCED NUCLEAR REACTOR.—The term ''advanced nuclear reactor'' has the meaning given the term in section 951(b) of the Energy Policy Act of 2005 (42 U.S.C. 16271(b)).

(2) EPSCOR UNIVERSITY.—The term ''EPSCoR university'' means an institution of higher education that participates in the Established Program to Stimulate Competitive Research Federal-State partnership program designed to enhance the capabilities of universities to conduct sustainable and nationally competitive energy-related research administered by the Department of Energy.

(3) HISTORICALLY BLACK COLLEGE OR UNIVERSITY.—The term ''historically Black college or university'' has the meaning given the term ''part B institution'' in section 322 of the Higher Education Act of 1965 (20 U.S.C. 1061).

(4) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(5) MINORITY-SERVING INSTITUTION.—The term ''minority-serving institution'' has the meaning given the term ''minority institution'' in section 365 of the Higher Education Act of 1965 (20 U.S.C. 1067k).

(6) NATIONAL LABORATORY.—The term ''National Laboratory'' has the meaning given the term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

(7) PROGRAM.—The term ''program'' means the University Infrastructure Revitalization Program established under subsection (c).

(8) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(c) ESTABLISHMENT OF PROGRAM.—Not later than 120 days after the date of enactment of this Act, the Secretary shall establish a program, to be known as the ''University Infrastructure Revitalization Program'', to promote collaborations, partnerships, and knowledge sharing between institutions of higher education, including EPSCoR universities, historically Black colleges and universities, and minority-serving institutions, National Laboratories, industry, and associated labor unions with the mission to revitalize and upgrade existing nuclear science and engineering infrastructure and develop new capabilities and expertise to support the development of advanced nuclear reactor technologies and applications.

(d) CONSORTIA.—

(1) IN GENERAL.—In carrying out the program, the Secretary shall establish university-led consortia comprised of institutions of higher education, including EPSCoR universities, historically Black colleges and universities, and minority-serving institutions, National Laboratories, industry, and associated labor unions to enhance university-based nuclear science and engineering infrastructure.

(2) ACTIVITIES.—The Secretary shall competitively award to consortia established under paragraph (1) awards—

(A) to enhance existing capabilities and establish new capabilities and expertise;

(B) to provide project management services and support, technical support, quality engineering and inspections, and nuclear material support to—

(i) existing university nuclear science and engineering programs in the United States as of the date of enactment of this Act;

(ii) the 25 existing research reactors at universities in the United States as of the date of enactment of this Act; and

(iii) new and emerging nuclear science and engineering programs at institutions of higher education, including—

(I) EPSCoR universities;

(II) historically Black colleges and universities; and

(III) minority-serving institutions.

(e) FUNDING.—Notwithstanding any other provision of this Act, out of any amounts appropriated pursuant to section 2117(a), there shall be made available to the Secretary to carry out this section $50,000,000 for each of fiscal years 2022 through 2026.

SA 1810. Mr. GRASSLEY (for himself, Ms. HASSAN, Mr. CORNYN, and Mrs. SHAHEEN) submitted an amendment intended to be proposed to amendment SA 1502 proposed by Mr. SCHUMER to the bill S. 1260, to establish a new Directorate for Technology and Innovation in the National Science Foundation, to establish a regional technology hub program, to require a strategy and report on economic security, science, research, innovation, manufacturing, and job creation, to establish a critical supply chain resiliency program, and for other purposes; which was ordered to lie on the table; as follows:

At the appropriate place, insert the following:

SEC. ___. EXTENSION OF TEMPORARY ORDER FOR FENTANYL-RELATED SUBSTANCES.

(a) IN GENERAL.—Section 2 of the Temporary Reauthorization and Study of the Emergency Scheduling of Fentanyl Analogues Act (Public Law 116–114; 134 Stat. 103) is amended by striking ''October 22, 2021'' and inserting ''December 16, 2022''.

(b) APPLICABILITY.—The amendment made by subsection (a) shall take effect as if enacted as part of the Temporary Reauthorization and Study of the Emergency Scheduling of Fentanyl Analogues Act (Public Law 116–114; 134 Stat. 103).

SA 1811. Mr. DURBIN (for himself and Ms. MURKOWSKI) submitted an amendment intended to be proposed to amendment SA 1502 proposed by Mr. SCHUMER to the bill S. 1260, to establish a new Directorate for Technology and Innovation in the National Science Foundation, to establish a regional technology hub program, to require a strategy and report on economic security, science, research, innovation, manufacturing, and job creation, to establish a critical supply chain resiliency program, and for other purposes; which was ordered to lie on the table; as follows:

Strike section 2214 and insert the following:

SEC. 2214. CRITICAL MINERALS MINING, RECYCLING, AND ALTERNATIVE TECHNOLOGIES RESEARCH.

(a) CRITICAL MINERALS MINING, RECYCLING, AND ALTERNATIVE TECHNOLOGIES RESEARCH AND DEVELOPMENT AT THE FOUNDATION.—

(1) IN GENERAL.—In order to support supply chain resiliency and reduce the environmental impacts of critical minerals mining, the Director shall issue awards, on a competitive basis, to institutions of higher education, nonprofit organizations, or National Laboratories (or consortia of such institutions or organizations, including consortia that collaborate with private industry) to support basic research that will accelerate innovation to advance critical minerals mining, recycling, and reclamation strategies and technologies for the purpose of making better use of domestic resources, finding alternative technologies, and eliminating national reliance on minerals and mineral materials that are subject to supply disruptions.

(2) USE OF FUNDS.—Activities funded by an award under this section may include—

(A) advancing mining research and development activities to develop new mapping and mining technologies and techniques, including advanced critical mineral extraction and production, to improve existing or to develop new supply chains of critical minerals, and to yield more efficient, economical, and environmentally benign mining practices;

(B) advancing critical mineral processing research activities to improve separation, alloying, manufacturing, or recycling techniques and technologies that can decrease the energy intensity, waste, potential environmental impact, and costs of those activities;

(C) advancing research and development of critical minerals mining and recycling technologies that take into account the potential end-uses and disposal of critical minerals, in order to improve end-to-end integration of mining and technological applications;

(D) conducting research and development on alternative technologies, such as in battery or energy storage technologies that minimize or do not incorporate critical minerals;

(E) conducting long-term earth observation of reclaimed mine sites, including the study of the evolution of microbial diversity at such sites;

(F) examining the application of artificial intelligence for geological exploration of critical minerals, including what size and diversity of data sets would be required;

(G) examining the application of machine learning for detection and sorting of critical minerals, including what size and diversity of data sets would be required;

(H) conducting detailed isotope studies of critical minerals and the development of more refined geologic models; or

(I) providing training and research opportunities to undergraduate and graduate students to prepare the next generation of mining engineers and researchers.

(b) CRITICAL MINERALS INTERAGENCY SUBCOMMITTEE.—

(1) IN GENERAL.—In order to support supply chain resiliency, the Critical Minerals Subcommittee of the National Science and Technology Council (referred to in this subsection as the ''Subcommittee'') shall coordinate Federal science and technology efforts to ensure secure and reliable supplies of critical minerals to the United States.

(2) PURPOSES.—The purposes of the Subcommittee shall be—

(A) to advise and assist the Committee on Homeland and National Security and the National Science and Technology Council on United States policies, procedures, and plans as it relates to critical minerals, including—

(i) Federal research, development, and deployment efforts to optimize methods for extractions, concentration, separation, and purification of conventional, secondary, and unconventional sources of critical minerals, including research that prioritizes end-to-end integration of mining and recycling techniques and the end-use target for critical minerals;

(ii) efficient use and reuse of critical minerals, including recycling technologies for critical minerals and the reclamation of critical minerals from components such as spent batteries;

(iii) research, development, and deployment of materials and technologies that can be used in place of technologies utilizing critical minerals, such as battery or energy storage technologies that minimize or do not incorporate critical minerals;

(iv) addressing the technology transitions between research or lab-scale mining and recycling and commercialization of these technologies;

(v) the critical minerals workforce of the United States; and

(vi) United States private industry investments in innovation and technology transfer from federally funded science and technology;

(B) to identify emerging opportunities, stimulate international cooperation, and foster the development of secure and reliable supply chains of critical minerals, including activities related to the reclamation of critical minerals via recycling and research and development of alternative technologies;

(C) to ensure the transparency of information and data related to critical minerals; and

(D) to provide recommendations on coordination and collaboration among the research, development, and deployment programs and activities of Federal agencies to promote a secure and reliable supply of critical minerals necessary to maintain national security, economic well-being, and industrial production.

(3) RESPONSIBILITIES.—In carrying out paragraphs (1) and (2), the Subcommittee may, taking into account the findings and recommendations of relevant advisory committees—

(A) provide recommendations on how Federal agencies may improve the topographic, geologic, and geophysical mapping of the United States and improve the discoverability, accessibility, and usability of the resulting and existing data, to the extent permitted by law and subject to appropriate limitation for purposes of privacy and security;

(B) assess the progress toward developing critical minerals recycling and reprocessing technologies, and alternative technologies;

(C) assess the end-to-end lifecycle of critical minerals, including for mining, usage, recycling, and end-use material and technology requirements;

(D) examine options for accessing and developing critical minerals through investment and trade with allies and partners of the United States and provide recommendations;

(E) evaluate and provide recommendations to incentivize the development and use of advances in science and technology in the private industry;

(F) assess the need for and make recommendations to address the challenges the United States critical minerals supply chain workforce faces, including—

(i) aging and retiring personnel and faculty;

(ii) public perceptions about the nature of mining and mineral processing; and

(iii) foreign competition for United States talent;

(G) develop, and update as necessary, a strategic plan to guide Federal programs and activities to enhance—

(i) scientific and technical capabilities across critical mineral supply chains, including a roadmap that identifies key research and development needs and coordinates ongoing activities for source diversification, more efficient use, recycling, and alternative technologies; and

(ii) cross-cutting mining science, data science techniques, materials science, manufacturing science and engineering, computational modeling, and environmental health and safety research and development; and

(H) report to the appropriate committees of Congress on activities and findings under this subsection.

(4) MANDATORY RESPONSIBILITIES.—In carrying out paragraphs (1) and (2), the Subcommittee shall, taking into account the findings and recommendations of the relevant advisory committees, identify and evaluate Federal policies and regulations that restrict the mining of critical minerals.

(c) GRANT PROGRAM FOR DEVELOPMENT OF CRITICAL MINERALS AND METALS .—

(1) ESTABLISHMENT.—The Secretary of Commerce, in consultation with the Director, the Secretary of the Interior, and the heads of other relevant Federal agencies, shall establish a grant program to finance pilot projects for the development of critical minerals and metals mining, recycling, and alternative technologies research and development in the United States.

(2) LIMITATION ON GRANT AWARDS.—A grant awarded under paragraph (1) may not exceed $10,000,000.

(3) ECONOMIC VIABILITY.—In awarding grants under paragraph (1), the Secretary of Commerce shall give priority to projects that the Secretary of Commerce determines are likely to be economically viable over the long term.

(4) SECONDARY RECOVERY.—In awarding grants under paragraph (1), the Secretary of Commerce shall seek to award not less than 30 percent of the total amount of grants awarded during the fiscal year for projects relating to secondary recovery of critical minerals and metals.

(5) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary of Commerce $100,000,000 for each of fiscal years 2021 through 2024 to carry out the grant program established under paragraph (1).

(d) DEFINITIONS.—In this section:

(1) ALTERNATIVE TECHNOLOGIES.—The term ''alternative technologies'' means the development of substitute materials that can substantially satisfy the metrics of the end-use application by either significantly minimizing or completely eliminating the need for critical minerals.

(2) CRITICAL MINERAL; CRITICAL MINERAL OR METAL.—The terms ''critical mineral'' and ''critical mineral or metal'' include any host mineral of a critical mineral (within the meaning of those terms in section 7002 of the Energy Act of 2020 (30 U.S.C. 1606).

(3) END-TO-END.—The term ''end-to-end'', with respect to the integration of mining or life cycle of minerals, means the integrated approach of, or the lifecycle determined by, examining the research and developmental process from the mining of the raw minerals to its processing into useful materials, its integration into components and devices, the utilization of such devices in the end-use application to satisfy certain performance metrics, and the recycling or disposal of such devices.

(4) RECYCLING.—The term ''recycling'' means the process of collecting and processing spent materials and devices and turning them into raw materials or components that can be reused either partially or completely.

(5) SECONDARY RECOVERY.—The term ''secondary recovery'' means the recovery of critical minerals and metals from discarded end-use products or from waste products produced during the metal refining and manufacturing process, including from mine waste piles, acid mine drainage sludge, or byproducts produced through legacy mining and metallurgy activities.

SA 1812. Mr. REED submitted an amendment intended to be proposed to amendment SA 1502 proposed by Mr. SCHUMER to the bill S. 1260, to establish a new Directorate for Technology and Innovation in the National Science Foundation, to establish a regional technology hub program, to require a strategy and report on economic security, science, research, innovation, manufacturing, and job creation, to establish a critical supply chain resiliency program, and for other purposes; which was ordered to lie on the table; as follows:

On page 1146, beginning on line 20, strike ''United States; and'' and all that follows through ''(2) be for'' on line 21 and insert the following: ''United States;

(2) ensure the retention of jobs at manufacturing facilities that have been active in the production of personal protective equipment within the year preceding the date of the enactment of this Act; and

(3) be for

SA 1813. Mr. REED submitted an amendment intended to be proposed to amendment SA 1502 proposed by Mr. SCHUMER to the bill S. 1260, to establish a new Directorate for Technology and Innovation in the National Science Foundation, to establish a regional technology hub program, to require a strategy and report on economic security, science, research, innovation, manufacturing, and job creation, to establish a critical supply chain resiliency program, and for other purposes; which was ordered to lie on the table; as follows:

At the end of division A, insert the following:

SEC. 1004. TAXPAYER PROTECTIONS.

The head of the relevant Federal agency or department may receive warrants, options, preferred stock, debt securities, notes, or other financial instruments issued by recipients of financial assistance made available under section 1002 or 1003, which, in the sole determination of the head of the Federal agency or department, provide appropriate compensation to the Federal Government for the provision of the financial assistance.

SA 1814. Mr. REED submitted an amendment intended to be proposed to amendment SA 1502 proposed by Mr. SCHUMER to the bill S. 1260, to establish a new Directorate for Technology and Innovation in the National Science Foundation, to establish a regional technology hub program, to require a strategy and report on economic security, science, research, innovation, manufacturing, and job creation, to establish a critical supply chain resiliency program, and for other purposes; which was ordered to lie on the table; as follows: